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Children's depressive symptoms and their regulation of negative affect in response to vignette depicted emotion-eliciting events

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The present study examined the relationship between sub-clinical depressive symptoms and children's anticipated cognitive and behavioral reactions to two written vignettes depicting emotion-eliciting stressors (i.e., fight with one's best friend and failure at a roller blade contest). Participants ($N = 244$) ranging in age between 10 and 13 were presented each vignette and then asked to rate their anticipated utilization of each of seven emotion-regulation strategies (ERs), along with the anticipated mood enhancement effects of each strategy. In addition, ratings of participants' perceived coping efficacy to manage the stressful situation were collected. Results indicated that participants were more likely to endorse ERs for which they have greater confidence in their mood enhancement effects. Moreover, marked differences were observed between ratings for conceptually distinct cognitive ERs. Consistent with expectations, results revealed that participants displaying higher levels of depressive symptoms were more likely to endorse cognitive and behavioral ERs that are negative, passive, and/or avoidant in nature. Children's ratings of the anticipated mood enhancement effects of several ERs were inversely related to their level of depressive symptoms, as was their perceived self-efficacy to manage the stressor.

Keywords: depression; emotion regulation; pre-adolescents; vignette assessment

Contemporary theorists have highlighted that emotions serve the crucial adaptive function of coordinating distinct response systems (i.e., physiology, motor behavior, expression, and cognitive processes) to respond to important challenges and opportunities in a way that most often serves our (short-term) interests (e.g., Frijda, 1988; Oatley & Jenkins, 1992; Saarni, 1999; Thompson, 1994). Although emotions incite to certain reactions, they do not determine them. Individuals have the capacity to modulate their emotional response tendencies (Frijda, 1986; James, 1884) and this important ability to regulate both positive and negative emotions figures prominently in human functioning (Gross, 1998).

With increasing age, cognition takes on a more central role in the transition towards more proficiency in emotion regulation. Increasingly sophisticated cognitive abilities (i.e., children gradually acquire an understanding of the mind as an interpretative device, Carpendale & Chandler, 1996) allow for mental forms of emotion regulation that, contrary to most forms of behavioral strategies, can be used in most situations (i.e., the mind is free to wander, whereas one's ability to change objective conditions is often hampered by situational and/or social constraints). By age 10, children have acquired a firmly established understanding of the usefulness of this crucial new mode of cognitive ERs (Harris, 1989; Meerum Terwogt & Stegge, 2001; Stegge, Meerum Terwogt, Reijntjes, & Van Tijen, 2004).

As already noted by Freud (1959), proficiency in emotion regulation is a fundamental prerequisite for adaptive daily functioning. However, people can experience difficulties in modulating emotion expression and experience in response to

contextual demands. Deficits in emotion regulation (emotion dysregulation) are implicated in half of the DSM-IV Axis-I disorders (e.g., depression, anxiety disorders, substance abuse, and eating disorders) and in all of the Axis-II disorders (APA, 1994; Cole, Michel, & O'Donnell Teti, 1994).

The failure to adequately regulate negative affect figures prominently in depression (Cole & Kaslow, 1988). Depressed children are less able to counter transient mood disruptions effectively (Garber & Dodge, 1991; Gross & Munoz, 1995). Despite widespread references to emotion dysregulation as being implicated in the development and/or maintenance of depression (e.g., Gross & Munoz, 1995; Saarni, 1999; Thompson, 1990, 1994), research examining the link between childhood emotion regulation and depression is still in its infancy. However, considerable research has examined the association between coping and psychological (mal)adjustment, including depressive symptoms (see Compas, Connor-Smith, Salzman, Thomsen, & Wadsworth, 2001). Coping has been defined as "cognitive and behavioral efforts to manage specific external and/or internal demands that are appraised as taxing or exceeding the resources of the person" (Lazarus & Folkman, 1984, p. 141). Coping is distinguished from emotion regulation by its primary focus on people's responses to stressful situations, rather than how they regulate their (negative) affect. Moreover, emotion regulation includes processes that may or may not tax the individual's resources (Gross, 1998).

Results from more than 60 studies have provided compelling evidence to suggest that how children and adolescents cope with stressors such as personal illness, pain, parental conflict,

adoption, and sexual abuse is an important correlate of both internalizing and externalizing problems (Compas et al., 2001). Although there has been little consistency in the various subtypes of coping across different studies, several consistent findings have emerged. Specifically, engagement/'approach' coping and problem-oriented coping (e.g., problem-solving, positive reappraisal of the stressor) have been linked with better adjustment, as indexed by both internalizing and externalizing problems. Conversely, in the majority of studies disengagement coping (e.g., cognitive avoidance, resigned acceptance, social withdrawal) has been linked with poorer adjustment (Compas et al., 2001).

To date, only one study has explicitly focused on the linkage between level of depressive symptoms in children and the regulation of emotions elicited by negative events. In their pioneering study, Garber and colleagues (Garber, Braafladt, & Weiss, 1995) observed that when presented with hypothetical negative emotion-eliciting vignettes, children scoring high on a commonly-administered depression scale ("depressed" children) were less likely to endorse behavioral approach strategies (e.g., support seeking, problem-solving activity) relative to a group of children scoring low on the depression scale ("non-depressed" children). Moreover, the depressed children rated these strategies as significantly less effective in counteracting negative mood relative to their non-depressed peers. Depression scores were also associated with children's cognitive reactions to the emotion-eliciting vignettes, such that depressed children were less likely to engage in cognitive ERs and held lower mood enhancement expectancies for these strategies.

An important contribution of the Garber et al. (1995) study is their examination of children's views on mental forms of ER. However, one potential limitation of this study was the collapsing of different cognitive strategies (e.g., positive reappraisal and mental avoidance) into one superordinate category (i.e., 'Cognitive Strategy'). Although the employment of relatively broad categories of ERs has the advantage of parsimony, collapsing diverse cognitive ways of regulating negative affect may obscure potentially important differences between individual ERs with regard to strategy endorsement and/or their mood enhancement effects. Indeed, in his process model of emotion regulation, Gross (1998) distinguishes between two conceptually distinct classes of cognitive ERs; i.e., attentional deployment and cognitive reappraisal/change.

In the present study, we sought to expand on the work of Garber et al. (1995) by investigating the linkage between level of depressive symptoms and several conceptually distinct cognitive and behavioral ERs. We also examined the relationship between strategy endorsement and perceived mood enhancement effects, and whether level of depressive symptoms qualifies that relationship. Children ranging from 10 to 13 years of age were presented with two hypothetical emotion-eliciting situations, one involving interpersonal relationships, and one involving individual achievement/mastery. Participants were first instructed to rate the extent to which they would use specific ER-strategies in the hypothetical situations. Moreover, in our attempt to identify factors that might qualify children's strategy use, participants also rated the mood enhancement effect of these strategies, and their overall perceived efficacy in resolving the problematic situation. We hypothesized that children who were higher in depressive symptoms would be less apt to respond to the hypothetical situations with cognitive and behavioral engagement strategies,

and more apt to respond with cognitive and behavioral disengagement strategies. We also predicted that depressive symptoms would be negatively associated with children's ratings of the mood-enhancing effects of most ER strategies, as well as their ratings of their overall efficacy to resolve the hypothetical problematic situations.

Method

Participants

Participants were 244 children (116 boys, 128 girls) enrolled in 4th ($N = 68$), 5th ($N = 91$) and 6th ($N = 85$) grade classes recruited from three public elementary schools in the Netherlands, who were predominantly from a middle-class Social Economic Status (SES) background. Within schools, complete classes participated. The response rate within classes ranged from 94.8% to 99.3%. The children ranged in age from 10 to 13 years of age ($M = 11.5$, $SD = .97$) and were predominantly Caucasian (92.5%). Written parental consent was obtained for all study participants.

Stimulus materials

Emotion-eliciting vignettes

Two emotion-eliciting vignettes were developed for this study (see below). Data collected among 20 children participating in another study revealed that both vignettes were rated as moderately emotion eliciting, but there was a trend ($p < .09$) for the interpersonal vignette to be rated higher on anticipated negative affect (i.e., feeling bad). The two vignettes did not differ with respect to frequency of occurrence. Each vignette consisted of a brief written paragraph describing a hypothetical social situation. Participants were instructed to read each vignette carefully and to imagine that they were in the situation themselves.

Vignette 1. This vignette presented a hypothetical situation involving interpersonal conflict with a same-sex peer. The vignette read as follows: "You have just had a bad quarrel with your best friend; you feel bad."

Vignette 2. This vignette presented a hypothetical achievement situation in which a child was described as having performed poorly in a roller blade contest. The vignette read as follows: "You have just participated in a roller blade contest in which you finished last; you feel bad."

Following the vignette description, participants were presented with a series of questions pertaining to five cognitive ER strategies and two behavioral ER strategies (see below).

Emotion-regulation strategies

Over the past two decades, research with children and adults has clearly established the complex, multidimensional structure of both emotion regulation and coping (e.g., Ayers, Sandler, & Twoney, 1998; Compas et al., 2001; Gross, 1998; Parkinson & Totterdell, 1999). However, robust and theoretically-meaningful dimensions that characterize emotion regulation in childhood and adolescence are still underdetermined. In our attempt to capture the diversity of children's possible

ERs when faced with emotion-eliciting events, we combined two broad and widely-used dimensions of emotion regulation/coping; i.e., cognitive vs. behavioral, and engagement vs. disengagement.

The cognitive-behavioral dimension (e.g., Meerum Terwogt & Stegge, 1995; Stegge et al., 2004) discriminates between overt behavioral and covert cognitive responses. In his process model of emotion regulation, Gross (1998) distinguishes between two conceptually distinct classes of cognitive ERs; i.e., strategies for changing attentional focus and strategies for cognitively reframing the situation so as to alter its emotional impact. The engagement-disengagement distinction (e.g., Ebata & Moos, 1991) represents responses oriented towards the source of stress ("approach"), and responses oriented away from the stressor ("avoidance"), respectively. With regard to engagement responses, some have distinguished between primary control and secondary control engagement. Primary control pertains to active efforts aimed to enhance a sense of personal control over the environment/stressor and one's emotions, where secondary control involves efforts aimed to adapt to the situation and palliate negative emotions that are evoked by the emotion-eliciting event (Conner-Smith, Compas, Wadsworth, Thomsen, & Saltzman, 2000).

Our dimensional approach, acknowledging that these dimensions are more likely to mirror complementary as opposed to orthogonal aspects of emotion regulation, yielded four broad qualitatively different methods of regulating negative affect. Because of our primary interest in cognitive emotion-regulation strategies, participants were presented with more cognitive ERs than behavioral ERs. In developing our specific strategies, we examined existing questionnaires and coding schemes designed to assess emotion regulation and coping strategies (e.g., Ayers et al., 1998; Gross, 1998; Parkinson & Totterdell, 1999; Sandler, Tein, & West, 1994). Four strategies (i.e., problem-focused behavior, cognitive disengagement, positive reappraisal, and mental distraction) were borrowed directly from these existing measures. The other strategies were chosen based on our previous work (Stegge et al., 2004) and the taxonomies discussed above. Similar to the commonly-used "Kidcope" coping measure (Spirito, Stark, Gil, & Tyc, 1995), each strategy was represented by a one-item exemplar. The specific strategies that were employed in the present study were tailored to the vignette-content and are presented below.

Engagement strategies

"Cognitive analysis". This primary-control cognitive strategy refers to cognitive activity focused on the negative event, e.g., "I would think about why I was having this quarrel with my best friend".

"Positive reappraisal". This secondary-control cognitive strategy involves reframing the distressing event as less negative, benign, or positive, e.g., "I would think about what good friends we are and that we will get back on good terms again soon".

"Problem-focused behavior". This primary-control behavioral strategy refers to active, approach behavior aimed at somehow solving or improving the negative event e.g., "I would go over to him/her and patch up the quarrel".

Disengagement strategies

"Cognitive disengagement". This cognitive strategy involves reducing the significance of the negative event by adopting an indifferent, detached attitude with respect to the meaning of the negative event, e.g., "I would think to myself that having this quarrel isn't that important anyway".

"Goal displacement". This cognitive strategy involves altering the meaning of the event by pursuing and/or focusing attention on another more important goal, e.g., "I would think that it is more important to be good at something else such as sports".

"Mental distraction". This cognitive strategy refers to engaging in thoughts unrelated to the mood-eliciting event, e.g., "I would not think about the quarrel, but think about something else like my birthday instead".

"Passive behavior". This behavioral strategy involves not engaging in any behavioral activity, i.e., "I just wouldn't do anything really".

Our analyses revealed relatively low correlations among the strategies employed. Specifically, the correlations ranged from $-.27$ to $.38$, (mean absolute value was $.18$) for the interpersonal vignette and from $-.25$ to $.29$ (mean absolute value was $.13$) for the achievement vignette (see Table 1). Hence, our findings revealed sufficient independence between ER strategies, suggesting that it might be misguided to collapse the strategies into superordinate groups.

Measures

Vignette reaction measures

The measures tapped the following assessment domains: (a) perceived likelihood of using each emotion-regulation strategy in the hypothetical situation; (b) perceived mood effect of each strategy; and (c) perceived overall self-efficacy in solving the depicted emotion-eliciting event. All participants rated the perceived likelihood of using each of the ER strategies for both vignettes (i.e., ER Strategy Utilization; see below). However, participants provided the other ratings (i.e., Mood-Enhancement Effects of ER Strategies and Perceived Self-Efficacy) for only one of the two vignettes (see below).

ER strategy utilization. A description of seven emotion-regulation strategies followed each vignette. For each ER strategy, participants rated, on a scale ranging from 1 (certainly not) to 5 (certainly yes), the likelihood that they would use the strategy if they were to actually find themselves in the situation. This procedure was repeated for each of the two vignettes.

Mood-enhancement effect of ER strategies. For each ER strategy, participants rated on a scale ranging from 1 (not) to 5 (strong) the extent to which using the strategy would make them feel better. Due to time constraints, each participant rated either the interpersonal vignette ($N = 116$) or the achievement vignette ($N = 127$). Specifically, four classrooms were randomly assigned to the interpersonal vignette, with the other four being assigned to the achievement vignette. The two groups did not differ in age (interpersonal: $M = 11.7$, $SD = 1.07$; achievement: $M = 11.4$, $SD = .84$), gender composition

Table 1*Inter-correlations among emotion-regulation strategies for interpersonal and achievement vignette*

Emotion regulation strategy	Cognitive analysis	Positive reappraisal	Cognitive disengagement	Goal displacement	Mental distraction	Problem focused	Passive reaction
Cognitive analysis	—	.01	-.09	.10	.13*	.26**	-.08
Positive reappraisal	.11	—	.28**	.07	-.09	-.01	.06
Cognitive disengagement	-.19**	-.19**	—	.23**	-.05	-.12	.29**
Goal displacement	-.09	-.10	.38**	—	.16*	-.21**	.13*
Mental distraction	.03	.11	.13*	.15*	—	-.02	.02
Problem focused	.18**	.22*	-.36**	-.17**	.06	—	-.25**
Passive reaction	-.16*	-.16*	.32**	.27**	.03	-.27**	—

Note. ** $p < .01$; * $p < .05$. Correlations below the diagonal pertain to the interpersonal vignette; correlations above the diagonal pertain to the achievement vignette.

(interpersonal: 51.7% female; achievement: 52.8% female), or level of depressive symptoms (interpersonal: $M = 5.53$, $SD = 4.56$; achievement: $M = 4.65$, $SD = 4.45$).

Perceived self-efficacy. Participants rated on a 5-point Likert scale, ranging from 1 (definitely not) to 5 (definitely yes) their overall perceived self-efficacy to resolve the problematic situation depicted in their assigned vignette. The questions used read as follows: “If I would do my best, I would manage to improve my performance substantially” (achievement vignette), and “If I would do my best, I would manage to patch up our quarrel” (interpersonal vignette). Participants provided this rating for only one of the two vignettes (see above).

Child Depression Inventory (CDI)

The CDI (CDI; Kovacs, 1981) is a 27-item self-report measure designed to assess the social, behavioral, and affective symptoms of depression in children. Patterned after the adult Beck Depression Inventory (Beck, Ward, Mendelson, Mock, & Erbaugh, 1961), each item consists of three sentences that describe a symptom of depression in varying degrees of severity. The respondent chooses the sentence that best describes him or her during the past week. Each item set is scored from 0 (symptom absent) to 2 (symptom is present always or most of the time). The CDI has demonstrated adequate discriminant and convergent validity, test-retest reliability, and internal consistency (Saylor, Finch, Spirito, & Bennett, 1984). Coefficient alpha in the present sample, using a Dutch translation of the instrument (Braet & Timbremont,

2002) was .81. Scores ranged from 0 to 24 (median is five; the top quartile (23.8%) of the participants obtained a score of 10 or higher); mean scores were indicative of a non-clinical sample ($M = 5.05$, $SD = 4.51$), and did not differ as a function of age, gender, or their interaction (p 's $> .10$).

Procedure

The CDI and the vignette measures were group-administered in the children's classrooms during regular school hours. A Ph.D. student in developmental psychology provided the children with a brief rationale indicating that the purpose of the survey was to better understand how to help children cope with difficult situations. Children were encouraged to ask any questions before beginning the survey. The regular classroom teacher remained in the room during administration of the measures. Participants completed the measures within 30 minutes.

Statistical analyses

Hypotheses regarding reported endorsement ratings of ERs were tested using a $2 \times 3 \times 2$ repeated measures MANCOVA design with gender and grade serving as the between subjects factors and Vignette Type (Achievement vs. Interpersonal) as the repeated measures factor. Continuous CDI score was entered into the model as a covariate. Follow-up simple effects analyses were performed on all significant interactions.

A different approach was used to analyze participants' perceived mood enhancement ratings of each emotion-regulation strategy, in view of the fact that participants provided these data for only one vignette. The main and interactive effects of gender, grade, vignette type, and level of depressive symptoms were examined using a $2 \times 3 \times 2$ between subjects MANCOVA, with continuous CDI score entered into the model as a covariate. Follow-up simple effects analyses were performed on all significant interactions.

In a similar vein, the main and interactive effects of gender, grade, vignette type, and level of depressive symptoms on participants' ratings of perceived coping self-efficacy were examined using a $2 \times 3 \times 2$ between subjects ANCOVA, again with continuous CDI score entered into the model as a covariate.

Finally, correlational analyses were performed to investigate the relationship between endorsement ratings and perceived mood enhancement effects of each emotion-regulation strategy. These analyses were performed on each vignette separately.

Results

Endorsement ratings of emotion-regulation strategy utilization

Endorsement ratings for each of the seven emotion-regulation strategies are presented in Table 2. Across the two vignettes, the most highly-endorsed ERs were *positive reappraisal* and *problem-focused behavior*. Overall, endorsement ratings were strongly influenced by vignette [Wilks' Lambda $F(7, 223) =$

45.73, $p < .001$]. Follow-up univariate analysis indicated that in response to the achievement vignette, relative to the interpersonal vignette, children endorsed significantly higher levels of passive behavior [$F(1, 229) = 48.59$, $p < .001$], cognitive disengagement [$F(1, 229) = 207.49$, $p < .001$], and goal displacement [$F(1, 229) = 107.66$, $p < .001$], whereas the reverse pattern was observed for the strategy of cognitive analysis: $F(1, 229) = 43.25$, $p < .001$.

Consistent with prediction, we observed a significant multivariate effect for level of depressive symptoms on children's ratings of their anticipated utilization of the various ER strategies [Wilks' Lambda $F(7, 223) = 3.98$, $p < .001$]. Follow-up univariate analyses indicated that children who were higher in depressive symptoms were *less* likely to endorse *problem-focused behavior* [$F(1, 229) = 7.01$, $p = .009$; $r = -.20$] and *positive reappraisal* [$F(1, 229) = 5.84$, $p = .016$; $r = -.19$], and *more* likely to endorse *passive behavior* [$F(1, 229) = 6.54$, $p = .011$, $r = .16$] to manage their anticipated negative emotional reaction to the vignettes.

The main effect of depressive symptoms was qualified by a significant vignette by CDI interaction [Wilks' Lambda $F(7, 223) = 3.51$, $p < .001$], which was significant for *cognitive disengagement* [$F(1, 229) = 17.49$, $p < .001$], *goal displacement* [$F(1, 229) = 4.15$, $p = .043$], and *cognitive analysis* [$F(1, 229) = 5.10$, $p = .025$]. Follow-up simple effects analyses for *cognitive disengagement* revealed that children scoring higher on the CDI were more likely to endorse this strategy in response to the interpersonal vignette ($r = .22$), whereas the reverse pattern was observed for the achievement vignette ($r = -.20$). Follow-up simple effects analyses for *goal displacement* showed that for the interpersonal vignette, endorsement ratings were positively related to children's CDI score ($r = .21$), whereas for the

Table 2

Endorsement ratings of emotion-regulation strategies for interpersonal and achievement vignettes for girls, boys, and total sample

Strategy		Vignette					
		Interpersonal			Achievement		
		Girls (N = 128)	Boys (N = 116)	Total (N = 244)	Girls (N = 128)	Boys (N = 116)	Total (N = 244)
Cognitive analysis	<i>M</i> (<i>SD</i>)	3.77 (1.22)	3.64 (1.23)	3.71 (1.22)	2.98 (1.21)	2.86 (1.21)	2.93 (1.21)
Positive reappraisal	<i>M</i> (<i>SD</i>)	4.23 (1.00)	3.91 (1.18)	4.07 (1.09)	4.16 (1.14)	4.22 (1.05)	4.19 (1.09)
Mental distraction	<i>M</i> (<i>SD</i>)	2.89 (1.20)	2.77 (1.28)	2.84 (1.23)	3.35 (1.08)	2.69 (1.40)	3.05 (1.27)
Cognitive disengagement	<i>M</i> (<i>SD</i>)	1.81 (1.14)	1.89 (1.15)	1.85 (1.15)	3.60 (1.32)	3.75 (1.32)	3.66 (1.32)
Goal displacement	<i>M</i> (<i>SD</i>)	2.20 (1.13)	2.15 (1.26)	2.18 (1.21)	3.52 (1.25)	3.62 (1.17)	3.57 (1.22)
Problem focused	<i>M</i> (<i>SD</i>)	4.02 (1.17)	3.91 (1.27)	3.96 (1.22)	3.80 (1.16)	3.85 (1.27)	3.82 (1.22)
Passive behavior	<i>M</i> (<i>SD</i>)	1.84 (1.20)	2.05 (1.33)	1.95 (1.28)	3.11 (1.28)	2.79 (1.48)	2.93 (1.38)

Note. Ratings range from 1 (certainly not) to 5 (certainly yes).

achievement vignette no significant relationship was observed ($r = .01$). Finally, follow-up simple effects analyses for *cognitive analysis* revealed that for the achievement vignette endorsement ratings were positively related to children's CDI score ($r = .17$), whereas for the interpersonal vignette no significant relationship was observed ($r = -.02$). No significant effects for grade, gender, or their interaction were observed.

Effects of vignette, gender, and depressive symptoms on the perceived mood enhancement effects of ER strategies

Data on children's ratings of the mood enhancement effects of each of the targeted ER strategies are presented in Table 3. Overall, mood enhancement ratings were strongly qualified by vignette [Wilks' Lambda $F(6, 210) = 9.39, p < .001$]. Follow-up univariate analysis revealed that in response to the achievement vignette, relative to the interpersonal vignette, participants anticipated significantly higher levels of mood enhancement to ensue from engaging in the strategies of *positive reappraisal* [$F(1, 215) = 11.74; p < .001$], *mental distraction* [$F(1, 215) = 11.08; p < .001$], *goal displacement* [$F(1, 215) = 32.32; p < .001$], and *cognitive disengagement* [$F(1, 215) = 67.21; p < .001$].

Consistent with prediction, we observed a significant multivariate effect for level of depressive symptoms on children's ratings of the mood-enhancing effects of the various ER-strategies [Wilks' Lambda $F(6, 210) = 4.41, p < .001$]. Follow-up univariate analysis showed that, across both vignettes, children's level of depressive symptoms was inversely related to mood enhancement ratings for *problem-solving* [$F(1, 215) = 9.96, p = .002; r = -.21$], *positive reappraisal* [$F(1, 215) = 5.46, p = .020; r = -.19$], and *cognitive analysis* [$F(1, 215) = 9.96,$

$p = .002; r = -.12$]. Conversely, level of depressive symptoms was positively associated with the anticipated mood enhancement effect of engaging in the strategy of *goal displacement* [$F(1, 215) = 6.10, p = .014; r = .08$]. No significant effects for grade, gender, or their interaction were observed.

Effects of vignette, gender, and depression on perceived coping self-efficacy

Perceived coping self-efficacy ratings did not differ as a function of the specific event ($M1 = 4.01, SD = 1.01$ and $M2 = 4.24, SD = .92$). Our analysis revealed a significant effect for CDI score: $F(1, 233) = 7.19, p = .008$. Across vignettes, as level of depressive symptoms increased, children reported lower levels of perceived self-efficacy in resolving the stressful situations ($r = -.22$). No significant effects for grade, gender, vignette, or their interactions were observed.

Relationship between endorsement ratings of ER strategies and their perceived mood enhancement effects

Data on the relationship between children's endorsement of ER strategies and their mood enhancement ratings are presented in Table 4. With the exception of cognitive analysis, strategy endorsement ratings across each of the two vignettes were significantly related to their perceived mood enhancement effects (r 's ranged from .25 to .50; all p 's $< .01$). Controlling for gender, level of depressive symptoms, or their interaction did not significantly alter the magnitude of these relationships. Hence, the relationship between endorsement and perceived enhancement of mood did not vary as a function of depressive symptoms.

Table 3

Perceived mood enhancement ratings of emotion regulation strategies for interpersonal and achievement vignettes for girls, boys, and total sample

Strategy		Vignette					
		Interpersonal			Achievement		
		Girls (N = 60)	Boys (N = 56)	Total (N = 116)	Girls (N = 67)	Boys (N = 60)	Total (N = 127)
Cognitive analysis	<i>M</i> (<i>SD</i>)	2.49 (1.17)	2.62 (1.35)	2.55 (1.26)	2.33 (1.30)	2.12 (1.22)	2.23 (1.27)
Positive reappraisal	<i>M</i> (<i>SD</i>)	3.24 (1.12)	3.11 (1.24)	3.19 (1.18)	3.90 (1.18)	4.00 (1.05)	3.94 (1.12)
Mental distraction	<i>M</i> (<i>SD</i>)	3.07 (1.17)	2.89 (1.40)	2.99 (1.29)	3.72 (1.16)	3.50 (1.13)	3.62 (1.15)
Cognitive disengagement	<i>M</i> (<i>SD</i>)	2.00 (1.32)	1.87 (1.09)	1.94 (1.17)	2.90 (1.33)	2.81 (1.46)	2.86 (1.38)
Goal displacement	<i>M</i> (<i>SD</i>)	2.35 (1.31)	2.49 (1.40)	2.42 (1.35)	3.54 (1.18)	3.58 (1.33)	3.56 (1.26)
Problem focused	<i>M</i> (<i>SD</i>)	4.04 (1.09)	3.96 (1.07)	4.01 (1.07)	3.95 (.97)	3.75 (1.12)	3.87 (1.04)

Note. Ratings range from 1 (not) to 5 (strong).

Table 4

Correlations between endorsement ratings of emotion regulation strategies and perceived mood enhancement effects for interpersonal and achievement vignettes

	<i>Cognitive analysis</i>	<i>Positive reappraisal</i>	<i>Mental distraction</i>	<i>Cognitive disengagement</i>	<i>Goal displacement</i>	<i>Problem focused</i>
Interpersonal (<i>N</i> = 116)	.18	.26*	.37*	.48*	.50*	.26*
Achievement (<i>N</i> = 127)	.08	.29*	.28*	.26*	.38*	.36*

Note. * $p < .05$.

Discussion

The present study sought to examine how children respond to negative emotion-eliciting vignettes. We presented children with two vignettes likely to be experienced as emotion eliciting should they occur in real life. Overall, our data revealed that children's anticipated use of ERs was to some extent vignette-dependent. Specifically, in response to the achievement vignette, children were more likely to endorse goal displacement, cognitive disengagement, and passive behavior; whereas cognitive analysis was the more highly-endorsed reaction to the interpersonal stressor. This discordance between the vignettes might be expected to the extent that they tapped two conceptually-distinct domains. Moreover, these results are similar to findings reported by Band and Weisz (1988) and Compas (1987), in suggesting that specific features of hypothetical stressful scenarios exert differential effects on reported reactions.

What might account for the differences in reported strategy use between the two stressors that were employed in the present study? One possibility is that the greater use of cognitive disengagement, goal displacement, and passive behavior in coping with the achievement stressor, relative to the interpersonal stressor, reflects participants' "acceptance" that the problem had occurred and that, at least in the short term, not much could be done about it. Conversely, engaging in cognitive analysis (i.e., thinking about the problem) may be considered more useful in response to the interpersonal stressor, due to higher levels of perceived control.

Consistent with expectations, our data suggest that participants are more likely to endorse ERs for which they have greater confidence in their probable mood-enhancement effects. With one exception (i.e., cognitive analysis) children's endorsement ratings of ER strategies were positively associated with the perceived mood enhancement effects of those ER strategies. These data suggest that, independent of their level of depressive symptoms, children anticipate coping with emotion-eliciting events in ways that bring about positive mood effects. Hence, our results provide some initial evidence to suggest that ER strategies in this age group are at least in part deployed with strategic purposes.

Our findings are consistent with the hypothesis that depressive symptomatology is associated with participants' endorsement of both behavioral and cognitive ER strategies in response to the emotion-eliciting events. In line with findings reported in the coping literature (see Compas et al., 2001 for a review), as CDI score increased a corresponding decrease was observed in children's anticipated use of problem-solving

as a strategy for regulating their negative emotions. Moreover, children with higher CDI scores reported higher anticipated levels of behavioral disengagement as indexed by their endorsement of passive reactions.

Several possible explanations may account for why children with higher levels of depressive symptoms are less apt to endorse problem-focused coping as an anticipated ER strategy. First, depressive pessimism is likely to contribute to children anticipating less favorable outcomes from their actions. Consequently, children with elevated depressive symptoms may be more apt to avoid problem-solving due to the expectation that such efforts will not lead to a favorable outcome, which, in turn, may serve as a self-fulfilling prophecy. Our finding that level of depressive symptoms was negatively related to children's expectation that problem-solving would lead to mood enhancement provides some support for this hypothesis. A second, related possibility is that children high in depressive symptoms may avoid attempting to resolve the problem because they expect that engaging in direct problem-solving attempts will produce undesirable effects (e.g., additional distress, ruminative thoughts). Finally, children high in depressive symptomatology (and presumably low in self-esteem) may hold more negative views about their skills to solve interpersonal or achievement-related problems. Our finding that level of depressive symptoms was inversely related to perceived self-efficacy to resolve the depicted problems in the vignettes is in line with such an account.

Consistent with our main hypothesis, level of depressive symptoms differentially qualified children's anticipated engagement in the targeted cognitive emotion-regulation strategies. In line with findings reported in the coping literature (Compas et al., 2001; Sandler et al., 1994), children scoring higher in depressive symptoms were less apt to endorse positive cognitive engagement strategies to deal with their negative affect. Specifically, across both vignettes children with elevated depressive symptoms were less inclined to engage in positive reappraisal and alter their construal of the emotion-eliciting event in a more positive fashion. This finding is in line with previous studies linking depression in children and adolescents to negative automatic thoughts, dysfunctional beliefs, and pessimism (e.g., Garber, Weiss, & Shanley, 1993; Leitenberg, Yost, & Carroll-Wilson, 1986; Robins & Hinkley, 1989).

Interestingly, for several cognitive ERs the relationship between depressive symptoms and strategy endorsement was vignette-specific. For instance, children higher on depressive symptoms were more apt to endorse cognitive analysis as a strategy to manage their negative feelings evoked by the

achievement failure; whereas this association was not observed for the interpersonal threat vignette. Moreover, children with elevated symptom scores were significantly more likely to endorse the strategies of goal displacement (i.e., "I might just as well play with someone else") and cognitive disengagement (i.e., "I don't really care anyway") only in response to the interpersonal threat vignette. Finally, in response to the achievement vignette, depressive symptoms were associated with lower endorsement ratings of cognitive disengagement, whereas, as previously noted, the reverse pattern was observed for the interpersonal vignette.

The greater endorsement of cognitive disengagement and goal displacement in response to the interpersonal threat vignette among children with higher levels of depressive symptoms suggests that these children are more likely to cognitively disengage when faced with problems in the domain of peer relations. These results are consistent with previous findings suggesting that depressed children experience less secure peer attachment: low trust, poor communication, and alienation (Armsden & Greenberg, 1987; Armsden, McCauley, Greenberg, Burke, & Mitchell, 1990). In contrast, children with elevated symptoms were more likely to exhibit cognitive engagement in response to the achievement failure, as evidenced by lower endorsement ratings of cognitive disengagement and our finding that these children were more apt to endorse cognitive analysis. Because this latter strategy was defined rather broadly (i.e., could refer to negative ruminations or adaptive thinking about solving the problem), the specific nature of the cognitive analysis remains unclear. However, we suspect that children high in depressive symptoms anticipated to engage in more negative ruminative cognitive activity (e.g., "Why did this happen again to me?").

What might account for the finding that in response to achievement failure children with higher depressive symptoms scores appear to be more inclined to cognitively engage with the stressor? One possible explanation for this finding comes from the coping literature and points to the potential importance of characteristics of the stressor. Specifically, based on numerous studies (e.g., O'Brien, Bahadur, Gee, Balto, & Erber, 1997; O'Brien, Margolin, & John, 1995; see also Compas et al., 2001) it appears that coping that is oriented toward engagement with the stressor is in particular associated with more internalizing problems, including depression, when the stressor is low in controllability (e.g., parental conflict, serious illness). Although we did not assess children's appraisals of their control over the course of the stressors, it seems likely that—at least in the short run—not that much can be done to improve performance in sports. Alternatively, it is possible that cognitive disengagement in the achievement domain may be perceived as leading to failure, whereas disengagement in the interpersonal domain may be perceived as playing it safe and avoiding the potential peer rejection that could result from engagement.

Depressive symptoms did not only qualify children's anticipated endorsement ratings of several ER strategies. Consistent with our expectations, our findings also revealed a negative relationship between level of depressive symptoms and children's perceived mood-enhancement ratings for several ERs, including problem-solving, positive reappraisal, and cognitive analysis. Interestingly, the opposite pattern was observed for the strategy of goal displacement. Why might depressed mood be associated with children perceiving goal displacement as a helpful strategy? One possibility is that

children scoring higher on depressive symptoms expected goal displacement to be helpful in modifying their negative affect, relative to positive reappraisal and cognitive analysis, because only this former strategy involves focusing attention completely away from the negative stimulus. With regard to the anticipated mood improvement effects of positive reappraisal and cognitive analysis, it should be noted that depressed mood is likely to be linked to the valence of cognitive content, such that if one feels depressed and thinks about the negative experience (i.e., engages in positive reappraisal or cognitive analysis), the thinking tends to be mood congruent, thus yielding minimal mood improvement.

Our data failed to provide evidence to suggest that pre-adolescent boys and girls differ with respect to their style of responding to emotional distress. Conversely, several studies among adults (e.g., Garnefski, Teerds, Kraaij, Legerstee, & van den Kommer, 2004; Nolen-Hoeksema, 1987, 1990) have demonstrated that when feeling depressed, adult women are more likely than men to focus on their distress and ruminate about it. Our finding that girls did not differ from boys in their anticipated responses to the stressors suggests that these gender differences among adults, which may partly explain the increased prevalence of depression among women (Nolen-Hoeksema & Girgus, 1994), may not yet be present in prepubescent children. Although speculative, this hypothesis is consistent with data suggesting that prior to puberty boys and girls do not differ in depression prevalence (Allgood-Merten, Lewinsohn, & Hops, 1990; Petersen, Sarigiani, & Kennedy, 1991).

Taken together, the findings of the present study contribute in several ways to the extant knowledge on the linkage between depression and emotion regulation in children. First, our data provide some support for the usefulness of distinguishing between conceptually distinct cognitive ER strategies. Specifically, where Garber et al. (1995) concluded that depressed children anticipate using cognitive ER strategies less than their peers, and also rate these strategies as significantly less effective in altering negative mood, our findings on the qualifying effects of depressive symptoms revealed clear differences across different cognitive ER strategies. For instance, where children's level of depressive symptoms was inversely related to the anticipated mood enhancement effects of positive reappraisal and cognitive analysis, the reverse pattern was observed for the strategy of goal displacement. These observed dissociations run opposite to the view that cognitive strategies are best considered exemplars of one overall construct, and support the usefulness of examining these strategies separately.

A second contribution of the present study is the demonstration that increased levels of depressive symptoms are associated with less effective regulation of negative affect, suggesting that the significance of depressive symptoms does not depend on exceeding an arbitrary "depression" threshold (e.g., CDI score greater than 12). Finally, the present study contributes to our current knowledge base by showing that, regardless of level of depressive symptoms, pre-adolescent children are more likely to endorse ER strategies for which they have greater confidence in their mood-enhancing effects.

Several features of the present study deserve comment. First, it should be noted that the use of hypothetical vignettes to examine emotion regulation primarily yields insight into children's beliefs about ER. Although it seems reasonable to assume that these beliefs or forecasts are at least in part based on observing one's own emotional reactions over time, they do

not necessarily coincide with their actual ER efforts in affectively charged real-life situations. However, regardless of their linkage with actual emotional reactions, children's *anticipated* emotional reactions may yield important data relevant to psychological adjustment and the development of specific emotional disorders since anticipated reactions reflect important cognitive processes operating at emotion regulation, such as cognitive biases in both attentional, judgement, and reasoning processes (Meerum Terwogt & Olthof, 1989; Robinson & Clore, 2002; Thompson & Calkins, 1996).

Whereas one might be inclined to consider reports on currently experienced emotions as more valuable than temporally remote reports, it should be noted that beliefs about emotions and their regulation may be more consequential than these emotions themselves. For instance, Telch and colleagues (Telch, Brouillard, Telch, Agras, & Taylor, 1989) have shown that the anticipation of fear/panic among people suffering from anxiety disorders exerts a considerably stronger effect on their daily lives and overall functioning (e.g., the avoidance of feared situations), relative to their actual experience of fear or panic when confronted with the fear-provoking situation. In a similar vein, our finding that children higher in depressive symptoms anticipate coping with unpleasant emotion-eliciting events in a more negative fashion may lead them to avoid certain challenging situations that could be rewarding if experienced (Pyszczynski, Holt, & Greenberg, 1987). Nevertheless, future work is needed which examines children's cognitive and behavioral ERs when faced with actual affectively-charged situations in real time. A promising advance in this regard is recent work conducted by Silk and colleagues (Silk, Steinberg, & Sheffield Morris, 2003). In this study, adolescents between 12 and 15 years reported on their use of specific cognitive and behavioral emotion-regulation strategies in response to a self-identified emotion-eliciting experience during the hour preceding a pre-programmed beep transmitted from a wristwatch. Results revealed that greater use of disengagement strategies (e.g., denial) or involuntary engagement strategies (e.g., rumination) was linked to less effective regulation of negative affect (i.e., lower levels of mood improvement).

Our sample selection deserves comment. Like so much of the depression research, our findings are based on a community sample of children, rather than a clinical sample with a diagnosed mood disorder. Children's mean scores on the CDI suggest that depressive symptoms were rather low in this sample. It therefore remains an empirical question to what extent our findings can be generalized to children with severe depressive symptomatology or those who meet criteria for a depressive disorder. Future research with diagnosed children is needed to determine the influence of clinical depression on children's emotion regulation.

Finally, similar to the majority of studies on coping and emotion-regulation, we employed a cross-sectional research design. Because our measures of emotion regulation and depressive symptoms were assessed at the same point in time, we cannot draw causal inferences with regard to the relationship between emotion regulation and depressive symptoms. Indeed, the use of certain ERs may contribute to the onset of depressive symptoms, maintain these symptoms, or merely reflect them. In order to demonstrate that ERs play a causal role in the subsequent development of depression, future studies should employ designs that can establish temporal precedence in the direction of effects. Prospective designs are needed to examine if ER strategies affect subsequent

depression after controlling for depression at baseline. Moreover, future studies should assess ERs of clinically-depressed individuals both during a depressive episode and during remission. This approach, in which differences in ERs are examined as a function of level of depression, might answer the question whether maladaptive ERs among depressed children should best be construed as a trait marker (i.e., a vulnerability factor that is independent of level of depression) or as a state effect.

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